

# RADIOMARELLI RM3218

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MODEL

# Fernseh-Empfänger Chassis STV 12

## Serviceanweisung Service manual

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Diese Service-Unterlage wurde ausschließlich für autorisiertes Fachpersonal hergestellt.  
Für Eingriffe durch nicht autorisierte Personen übernimmt SCHNEIDER keine Haftung.

This service manual was only made for authorized specialists.  
For interventions by not authorized persons SCHNEIDER don't take possession of liability.

## Abgleichanweisung

Wenn nicht anders angegeben, Philips-Kombi-Testbild verwenden und Helligkeit und Kontrast normal einstellen.

### 1. Betriebsspannungen

- Helligkeit, Kontrast und Lautstärke auf Minimum einstellen.
- Mit R 806 (Adjust 148 V) 148 V  $\pm 0,5$  V einstellen (TP 801).

### 2. Horizontal-Teil

#### Bildlage

- Mit R 102 (H-Shift) horizontale Bildlage einstellen.

#### Bildbreite

- Mit R 659 (Width) Bildbreite einstellen.

#### O/W Amplitude

- Mit R 660 (E/W-Par) auf geringsten Ost-West-Fehler einstellen.

#### O/W Phase

- Mit R 668 (E/W-Phase) auf geringsten Ost-West-Fehler einstellen.

### 3. Vertikal-Teil

#### Bildlage

- Mit R 408 (Shift) vertikale Bildlage einstellen.

#### Bildhöhe

- Mit R 412 (V-A) Bildhöhe einstellen.

#### Linearität

- Mit R 410 (Lin) Vertikallinearität einstellen.

### 4. Weißabgleich / Schirmgitterspannung $U_{G_2}$

- Schwarz-Weiß-Testbild empfangen
- Schirmgitterspannungsregler auf Linksanschlag drehen.  
Regler R 710 und R 720 (Gain) und R 715, R 725 und R 735 (Cutoff) auf mech. Mitte einstellen.
- TP 108 und TP 109 (ZF-Farbdekomodulator) kurzschießen (Vertikal-ablenkung »off«).
- Achtung! Einbrenngefahr!**
  - TP 760 und TP 760' (Bildrohrplatine) kurzschießen (Schwarzwertnachbildung).
  - Schirmgitterspannungsregler nach rechts drehen, bis Linie der stärksten Farbe gerade sichtbar wird.
  - Regler R 715, R 725 und R 735 (Cutoff) so einstellen, daß Linie weiß erscheint.
  - Kurzschlußbrücken wieder entfernen.
  - Mit R 710 und R 720 (Gain) Weißwert einstellen.

### 5. Automatische Verstärkungsregelung (AGC)

- UHF-Kombi-Testbild einstellen ( $\geq K 60, 60 \text{ dB}\mu\text{V}$ ).
- Mit VR 103 größten Gleichspannungswert am TP 105 einstellen.
- VR 103 so verändern, daß Regeleinsatz gerade beginnt (ca. 0,5 V abgeregelt).

### 6. Fokus

- Helligkeit normal, Kontrast auf Maximum einstellen.
- Mit Fokusregler (am Zeilentrafo) optimale Bildschärfe einstellen

## Alignment procedure

When not otherwise noted use Philips pattern and set Brightness and Contrast to normal position.

### 1. Operating voltages

- Set Brightness, Contrast and Loudness to minimum position.
- Adjust R 806 (Adjust 148 V) to obtain 148 V  $\pm 0,5$  V (TP 801).

### 2. Horizontal circuit

#### Shift

- Adjust R 102 (H-Shift) to obtain a normal horizontal position.

#### Width

- Adjust R 659 (Width) to obtain a normal picture width.

#### E/W Amplitude

- Adjust R 660 (E/W-Par) to obtain the best E/W Amplitude.

#### E/W Phase

- Adjust R 668 (E/W Phase) to obtain the best E/W Phase.

### 3. Vertical Circuit

#### Shift

- Adjust R 408 (Shift) to obtain a normal vertical position.

#### Picture height

- Adjust R 412 (V-A) to obtain a normal picture height.

#### Linearity

- Adjust R 410 (Lin) to obtain the best vertical linearity.

### 4. White Adjustment / Screen control $U_{G_2}$

- Receive Black and White test pattern.
- Turn the screen control to minimum position.
- Set R 710 and R 720 (gain) and R 715, R 725 and R 735 (Cutoff) to the middle position.
- Connect TP 108 and TP 109 (IF-Colour decoder) with a jumper wire (vertical deflection »off«).
- Attention! Danger of burn-in!**
  - Connect TP 760 and TP 760' (CRT-board) with a jumper wire (Quasi Black level).
  - Turn the screen control clockwise to the point where the line of the best colour just illuminates.
  - Adjust R 715, R 725 and R 735 (Cutoff) to obtain a white line.
  - Remove jumper wires.
  - Adjust R 710 and R 720 (Gain) to obtain a white picture.

### 5. Automatic Gain Control (AGC)

- Receive VHF-Philips-pattern ( $\geq CH 60, 60 \text{ dB}\mu\text{V}$ ).
- Adjust VR 103 to obtain the highest DC voltage level at TP 105.
- Adjust VR 103 so that the automatic regulation just begins (ca. 0,5 V down).

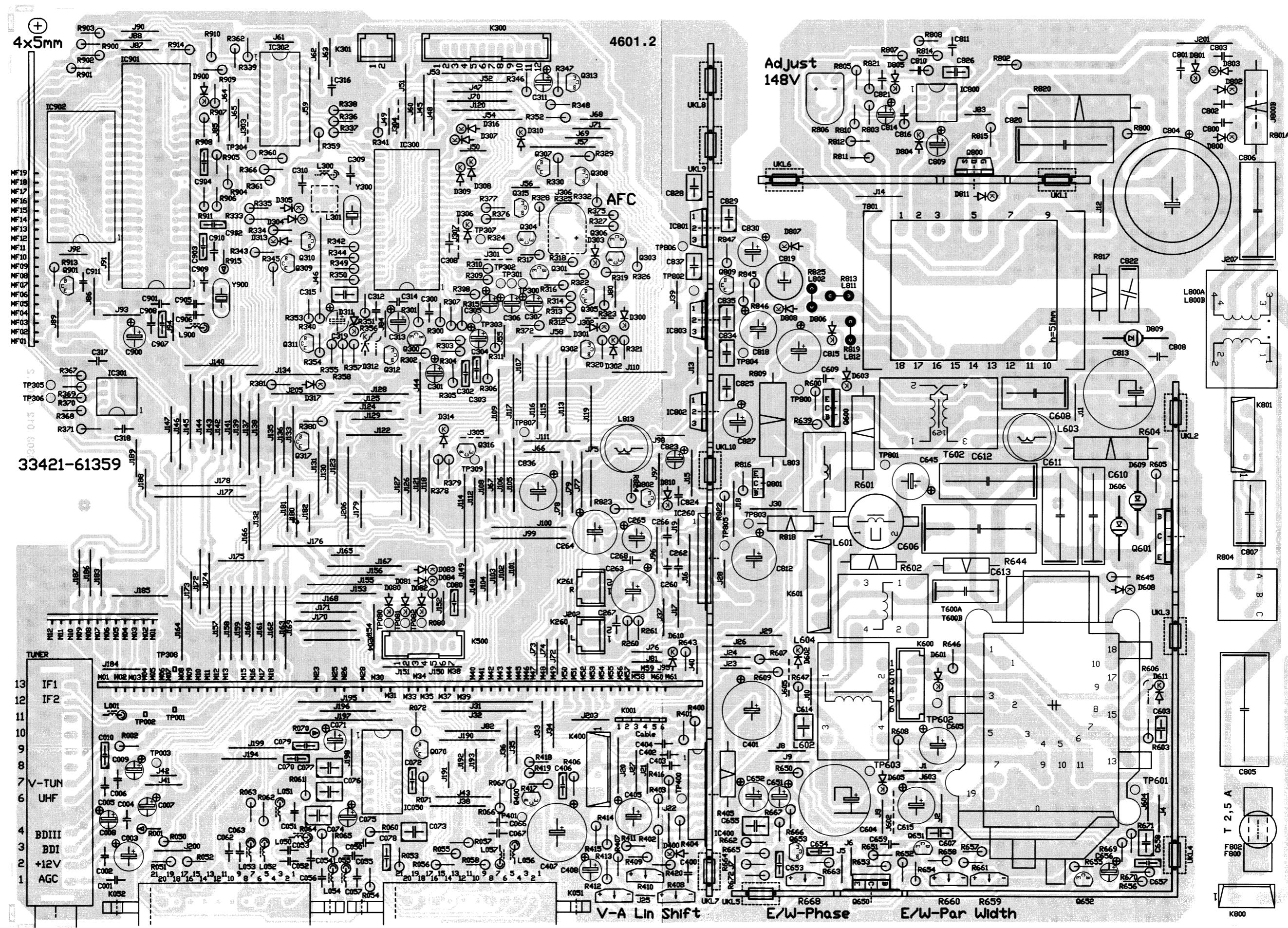
### 6. Focus

- Set Brightness to normal and Contrast to maximum position.
- Adjust Focus control (on FBT) to obtain best picture sharpness.

# Grundplatine Main board

# Bestückungsseite

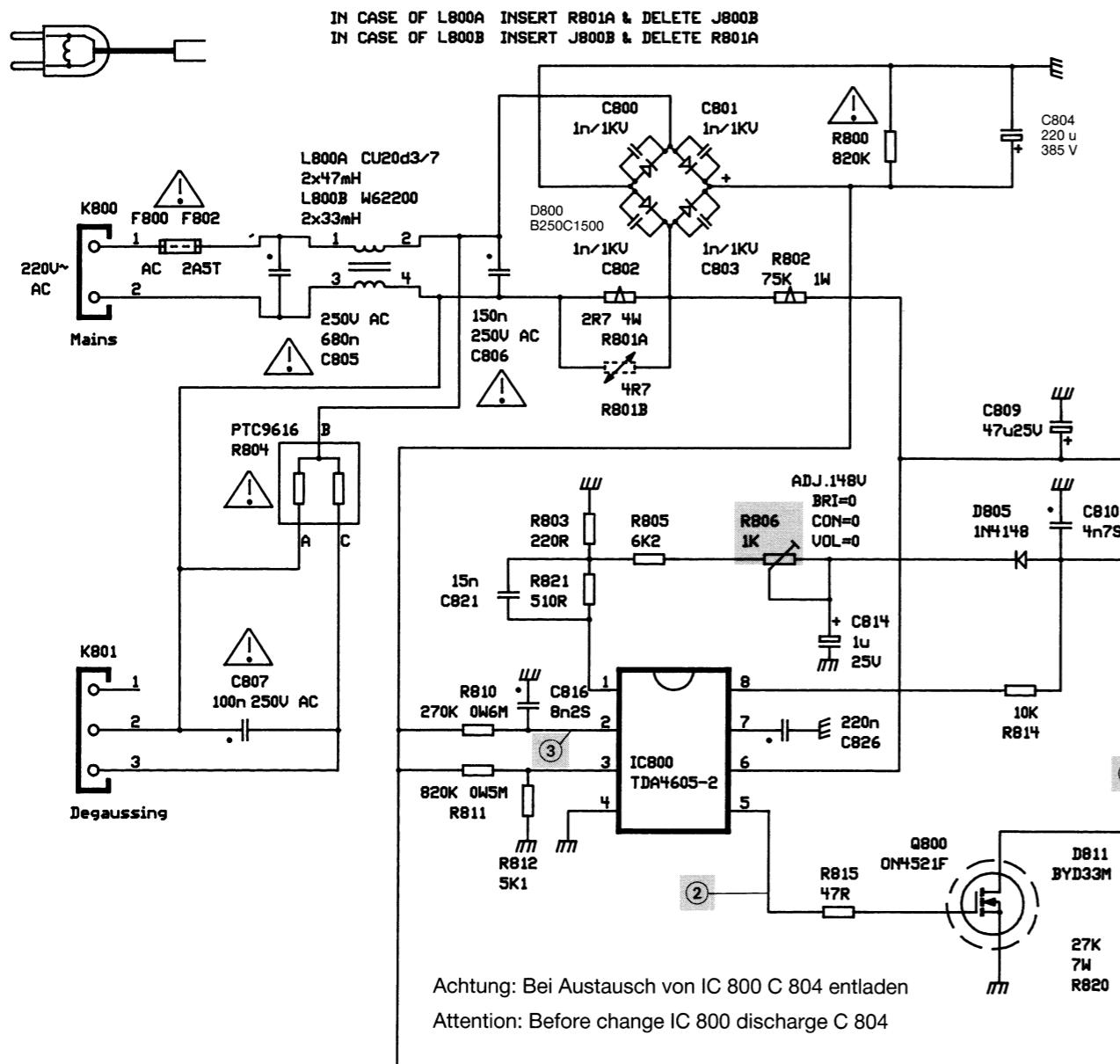
## Top view



## Netzteil Power supply

= Sicherheitsbauteile sind unbedingt durch Originalteile zu ersetzen.

= Please use original spare parts only.

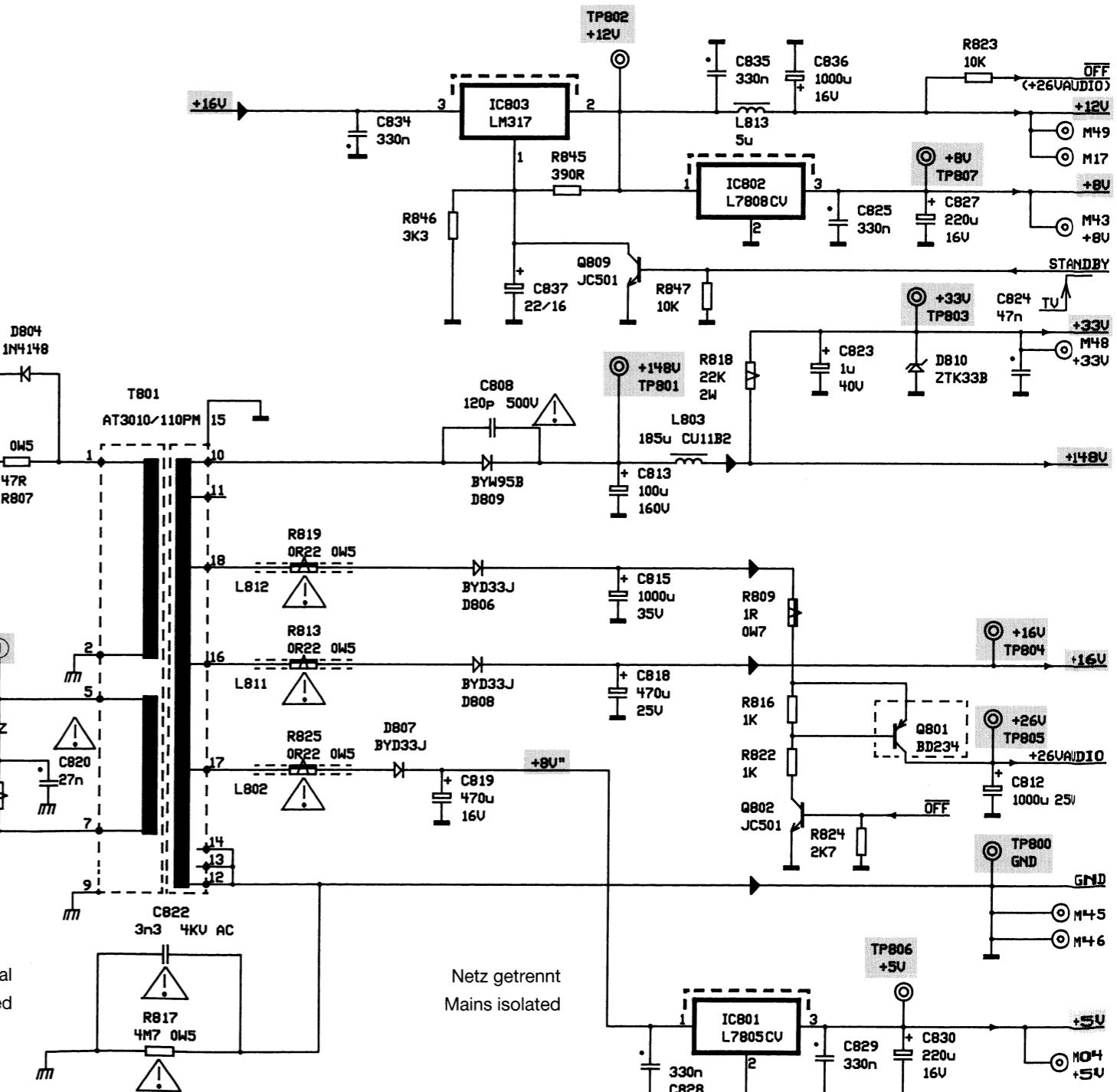


Pin On	Stdby	Pin On	Stdby		
1	0,4 V	0,4 V	5	4,5 V	0,6V
2	1,3 V	1,9 V	6	12,9V	12,5 V
3	1,9 V	1,9 V	7	2,2 V	1,1 V
4	-	-	8	0,3 V	0,3 V

Spannungen am IC 800 sind gegen Masse der Netzteil-Primärseite gemessen.

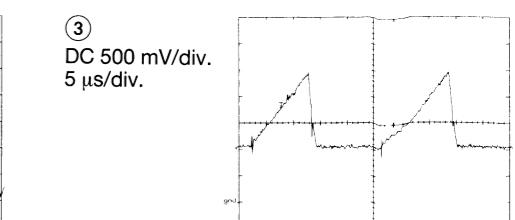
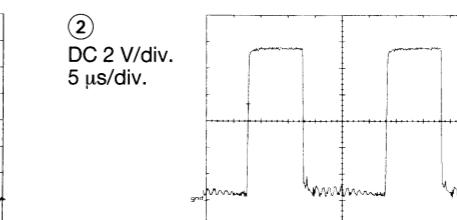
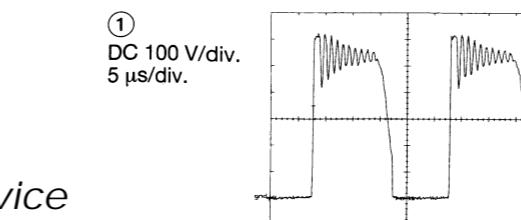
Voltages at IC 800 are measured with ground of primary side of power supply.

MC-Service



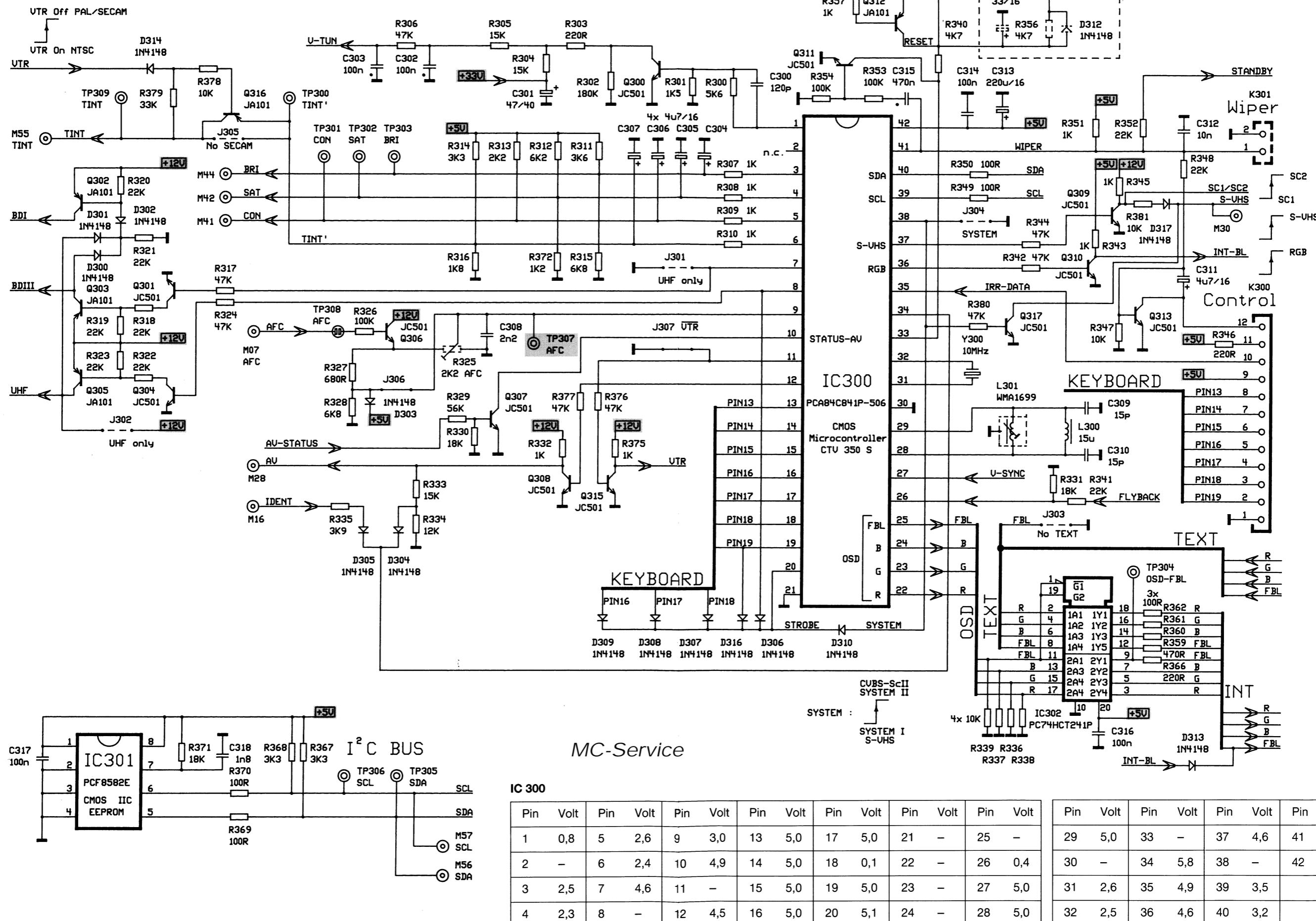
Netzpotential  
Mains not isolated

Netz getrennt  
Mains isolated



## Processor

### Processor



MC-Service

IC 300

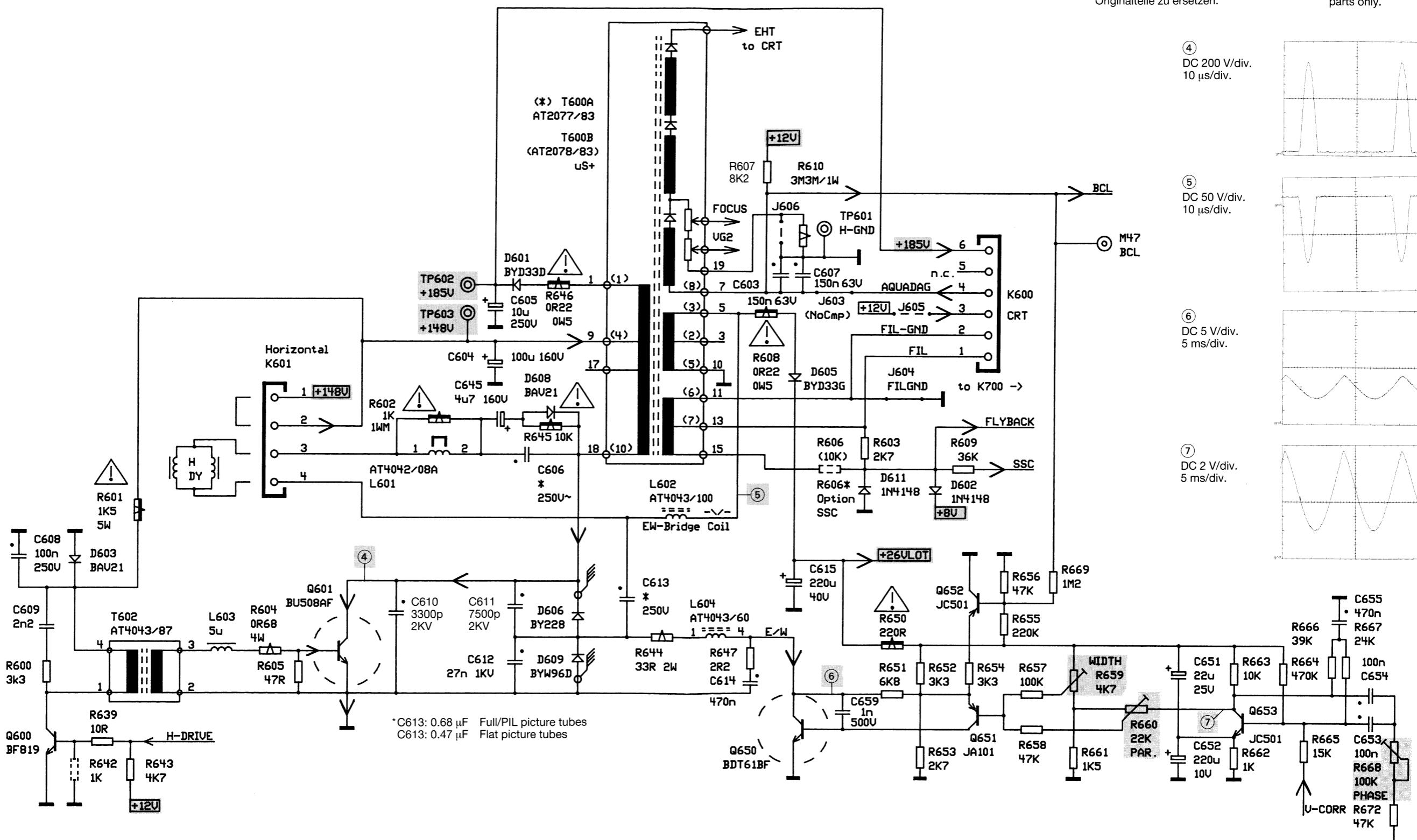
Pin	Volt								
1	0,8	5	2,6	9	3,0	13	5,0	17	5,0
2	-	6	2,4	10	4,9	14	5,0	18	0,1
3	2,5	7	4,6	11	-	15	5,0	19	5,0
4	2,3	8	-	12	4,5	16	5,0	20	5,1
21	-	22	-	23	-	24	-	25	-
26	-	27	-	28	-	29	-	30	-
31	5,0	33	-	37	4,6	41	0,5		
32	-	34	5,8	38	-	42	5,0		
35	2,6	35	4,9	39	3,5				
36	2,5	36	4,6	40	3,2				

## Horizontalstufe

### Horizontal circuit

= Sicherheitsbauteile  
sind unbedingt durch  
Originalteile zu ersetzen.

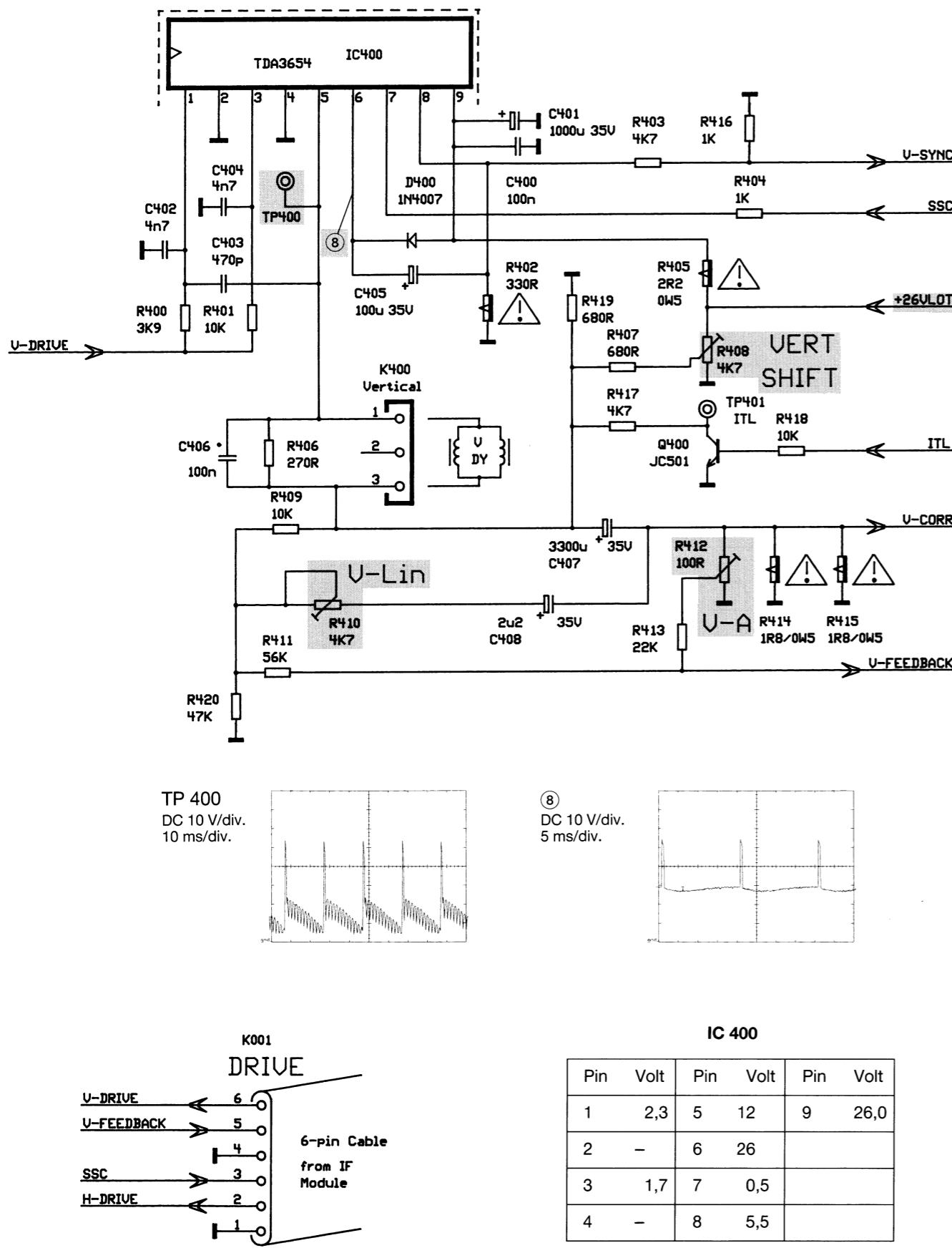
= Please use  
original spare  
parts only.



MC-Service

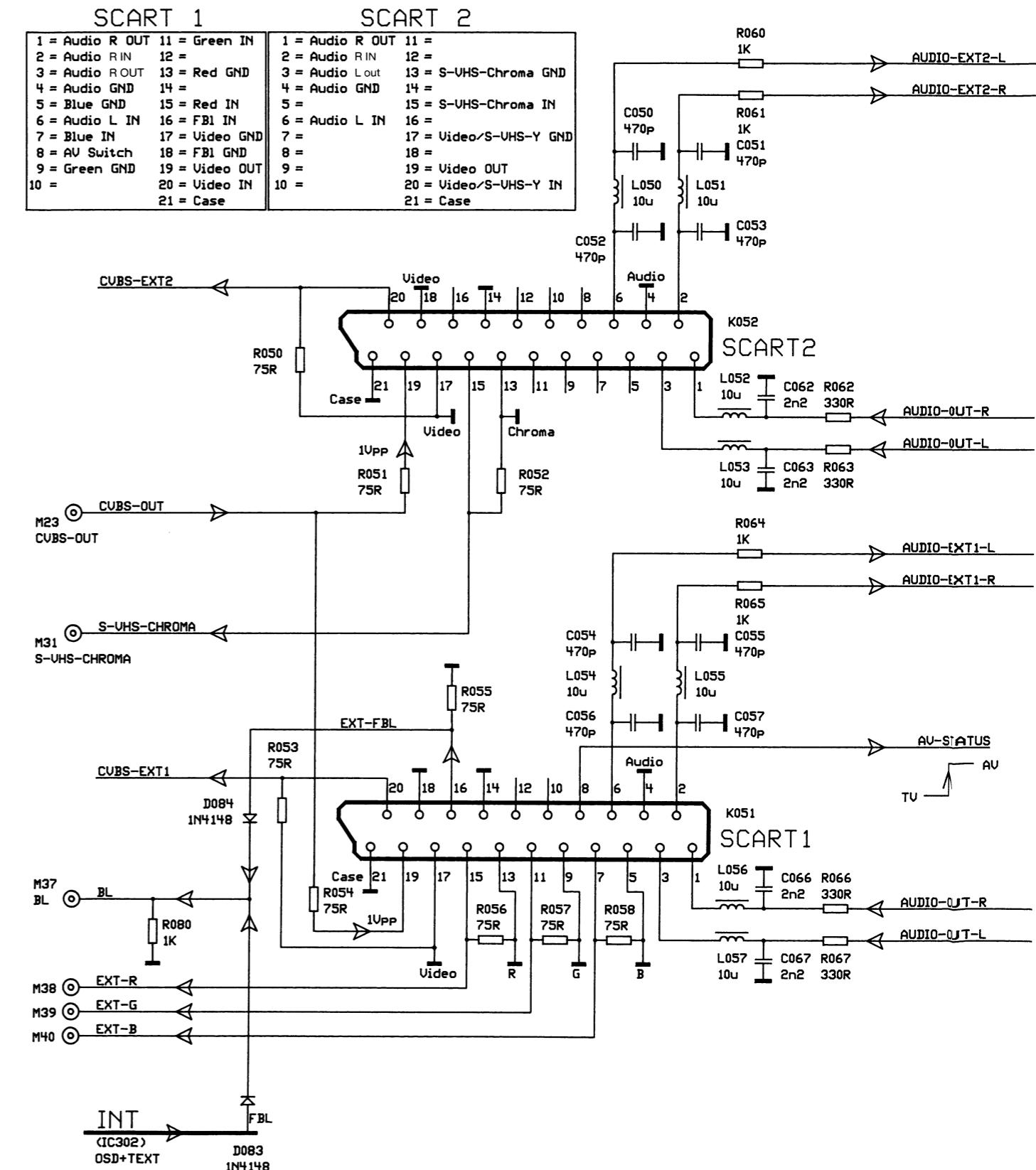
## Vertikalstufe

### Vertical circuit



## Scartanschluß

### Scart allocation

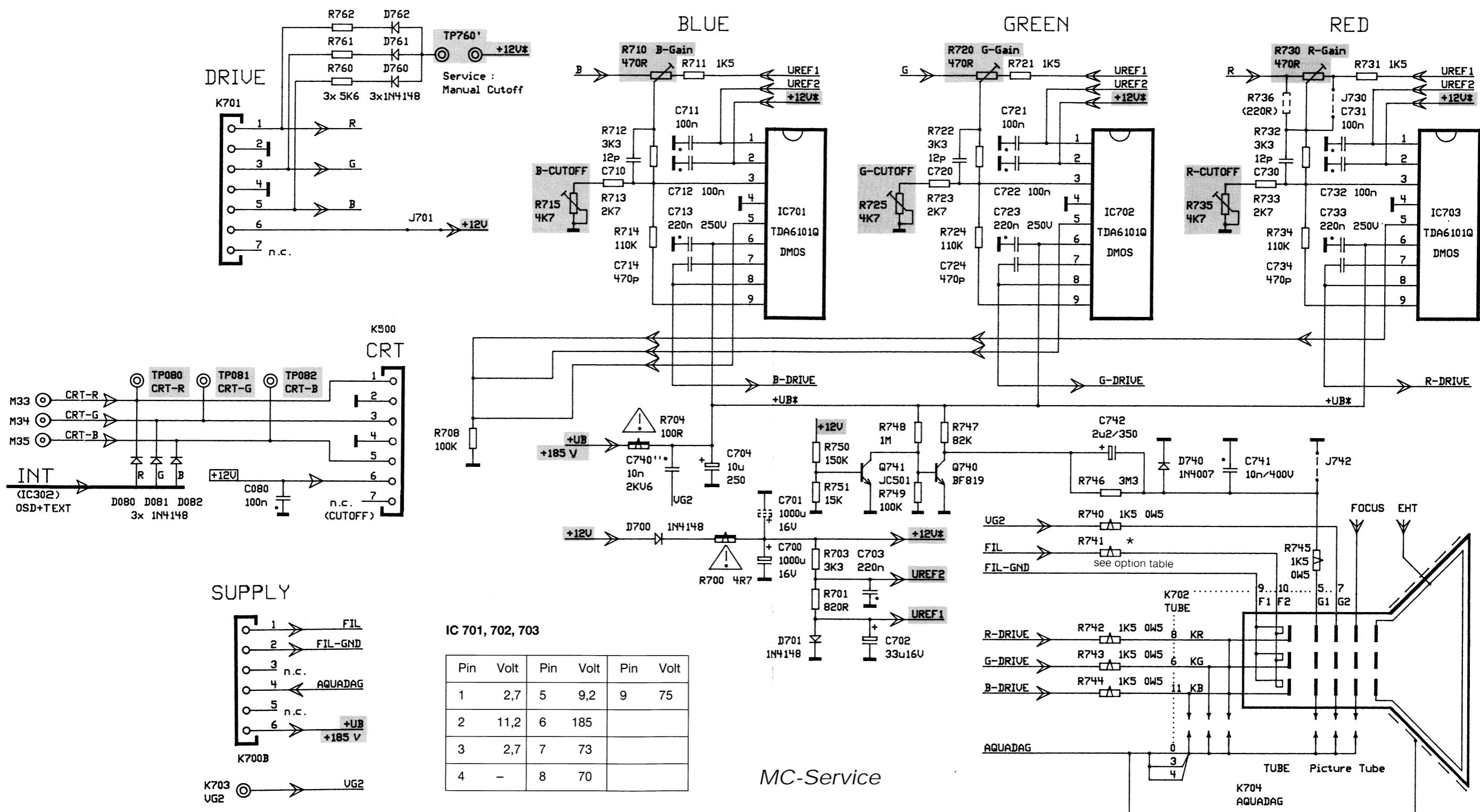


# Bildrohrplatine

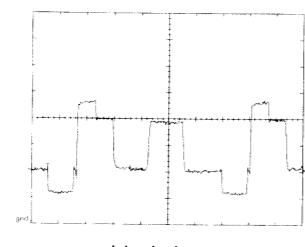
## CRT board

$\triangle$  = Sicherheitsbauteile  
sind unbedingt durch  
Originalteile zu ersetzen.

$\triangle$  = Please use  
original spare  
parts only.

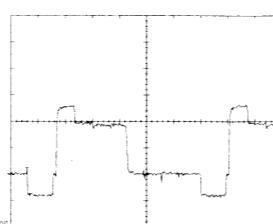


TP 080  
DC 1 V/div.  
10  $\mu$ s/div.



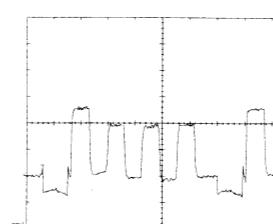
Ideal picture

TP 081  
DC 1 V/div.  
10  $\mu$ s/div.



Ideal picture

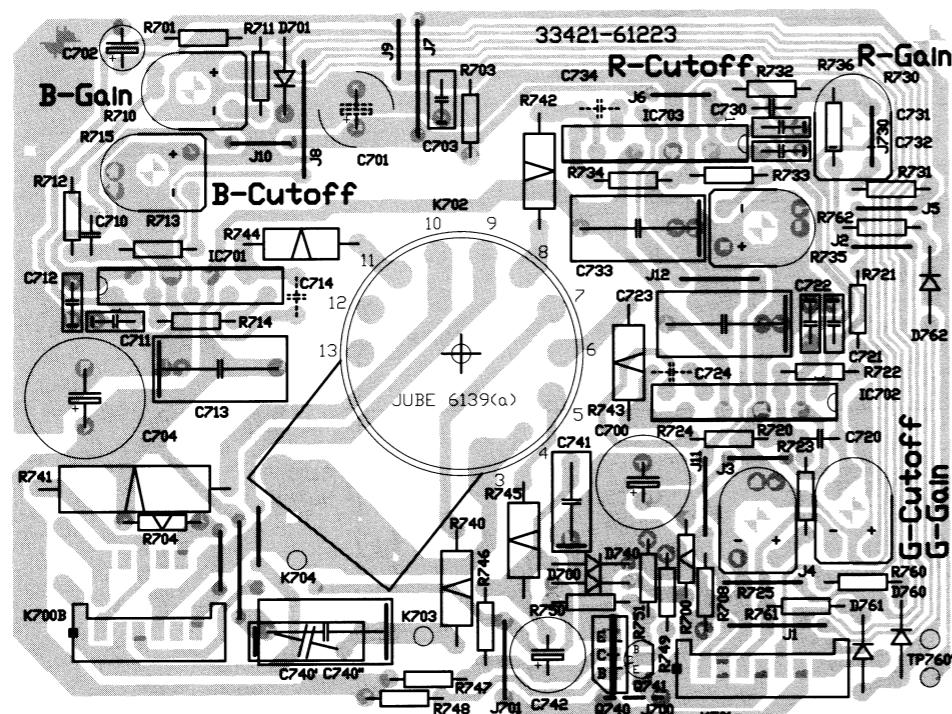
TP 082  
DC 1 V/div.  
10  $\mu$ s/div.



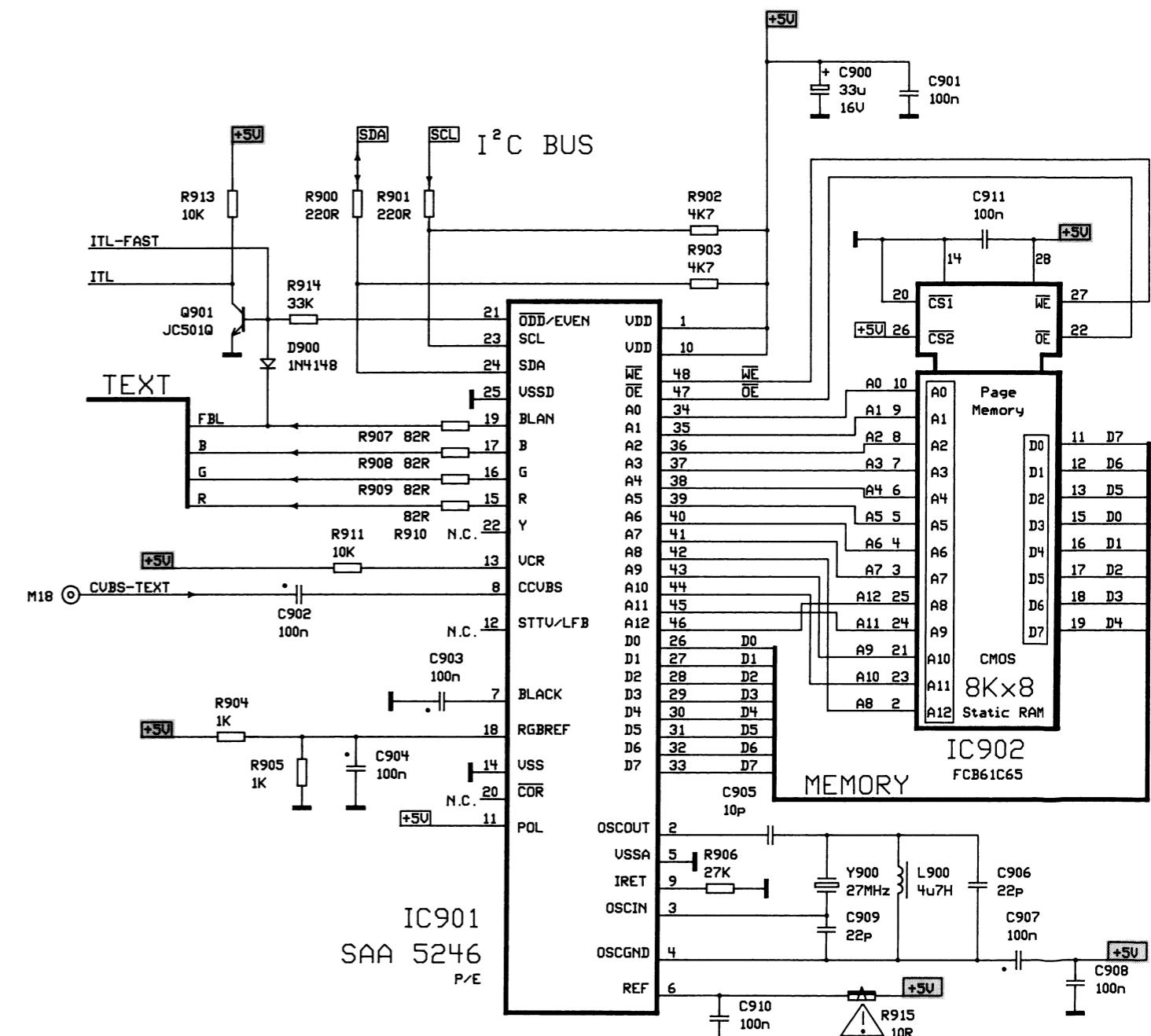
Ideal picture

* R 741:	A 56-701 X	: 2.7 $\Omega$
	A 63 ECQ 11X08	: 2.7 $\Omega$
	A 63 NCQ 00X08	: 2.7 $\Omega$
	A 59 EAF 10X01	: 5.6 $\Omega$
	A 59 ECF 10X05	: 5.6 $\Omega$
	A 66 EAF 10X01	: 5.6 $\Omega$
	A 66 ECF 10X05	: 5.6 $\Omega$

**Bildrohrplatine**  
**CPT board**  
**Bestückungsseite**  
**Top view**

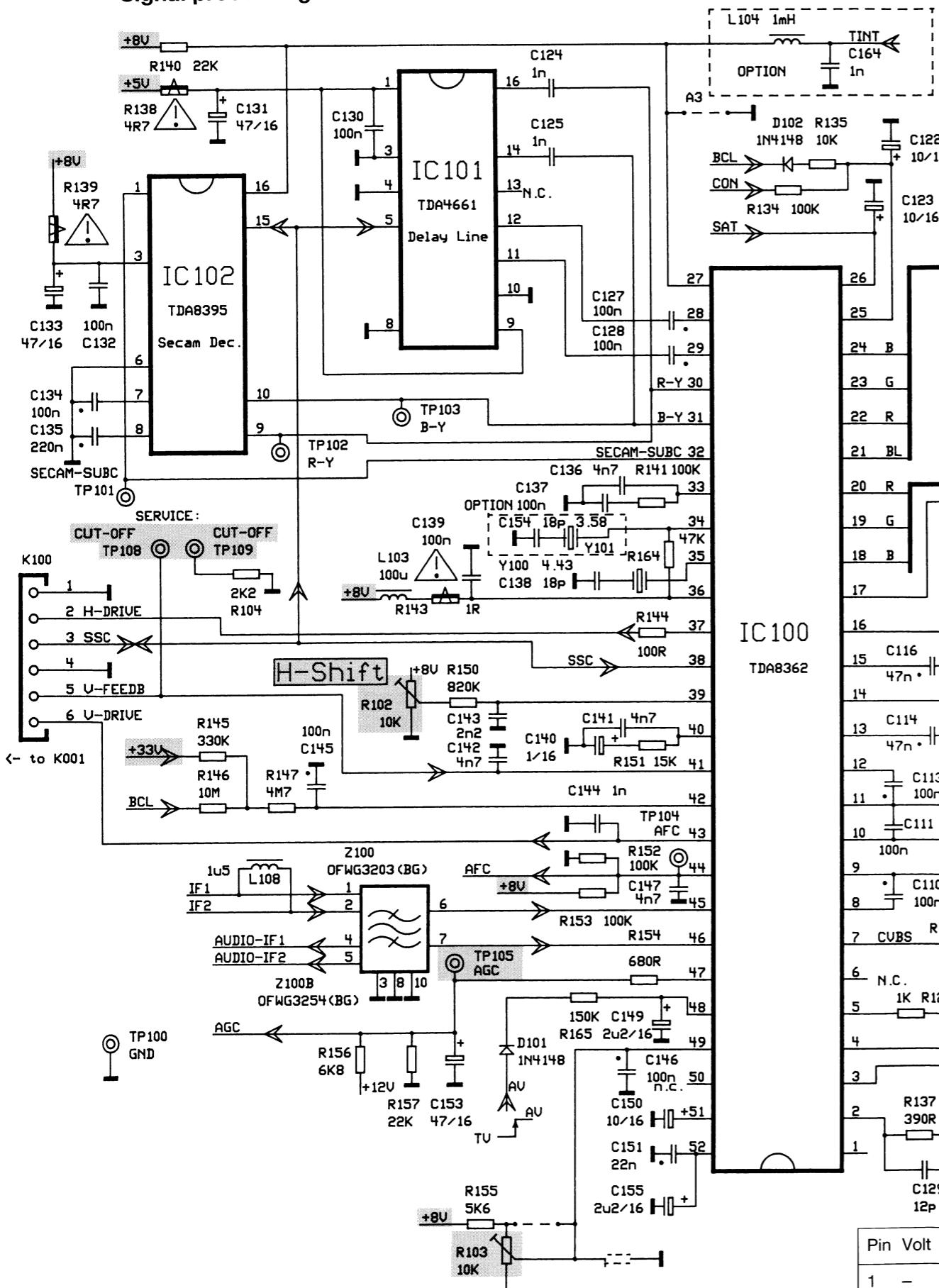


**Videotext**  
**Teletext**



## Signalverarbeitung

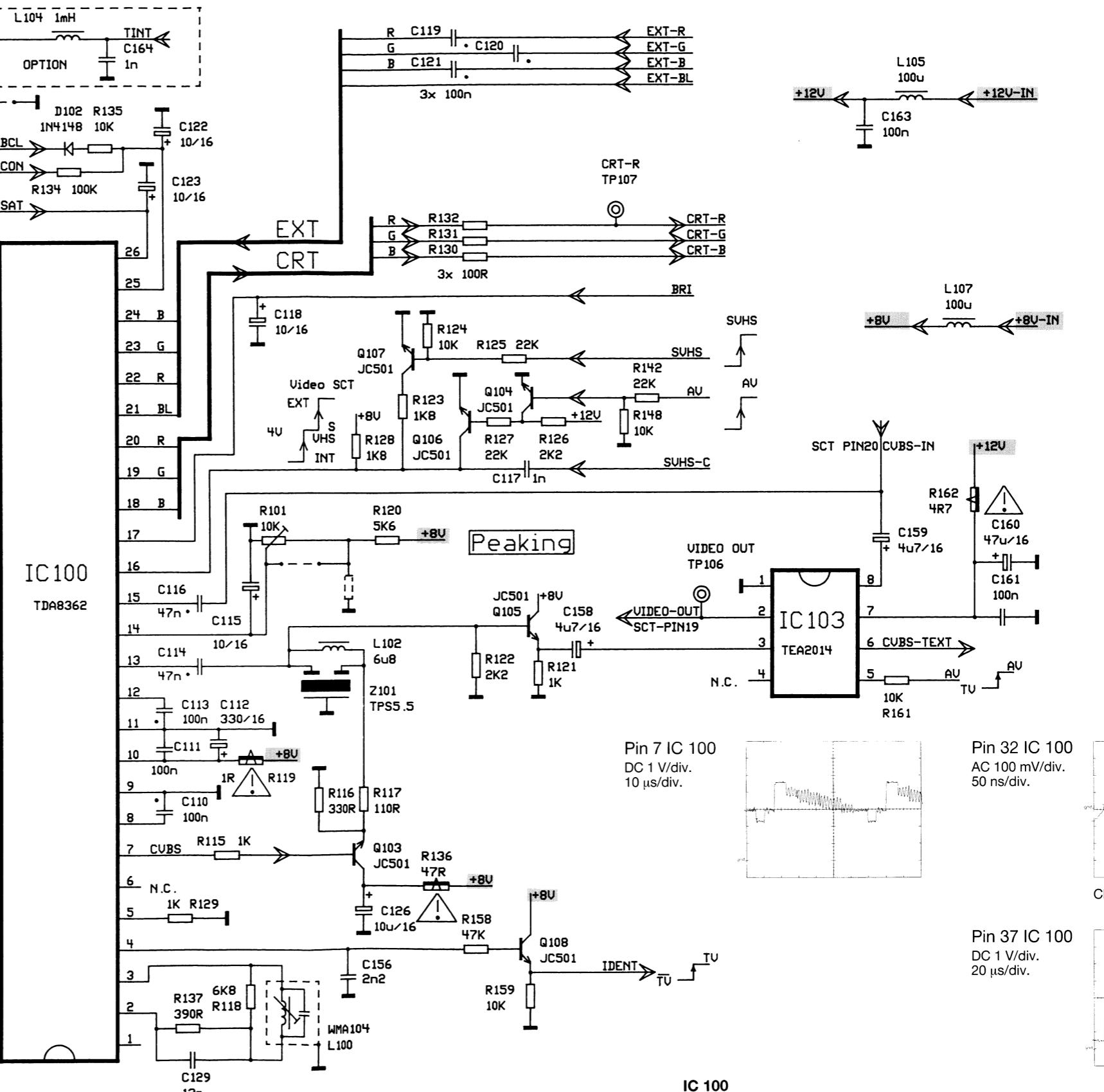
### Signal processing



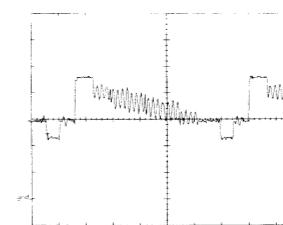
MC-Service

⚠ = Sicherheitsbauteile sind unbedingt durch Originalteile zu ersetzen.

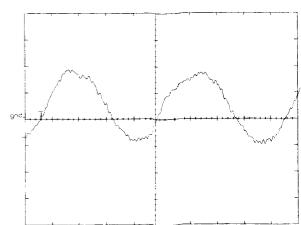
⚠ = Please use original spare parts only.



Pin 7 IC 100  
DC 1 V/div.  
10  $\mu$ s/div.

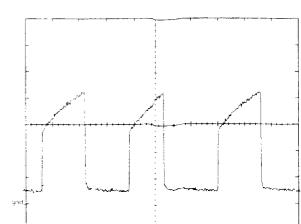


Pin 32 IC 100  
AC 100 mV/div.  
50 ns/div.



Check for 4.4 MHz

Pin 37 IC 100  
DC 1 V/div.  
20  $\mu$ s/div.

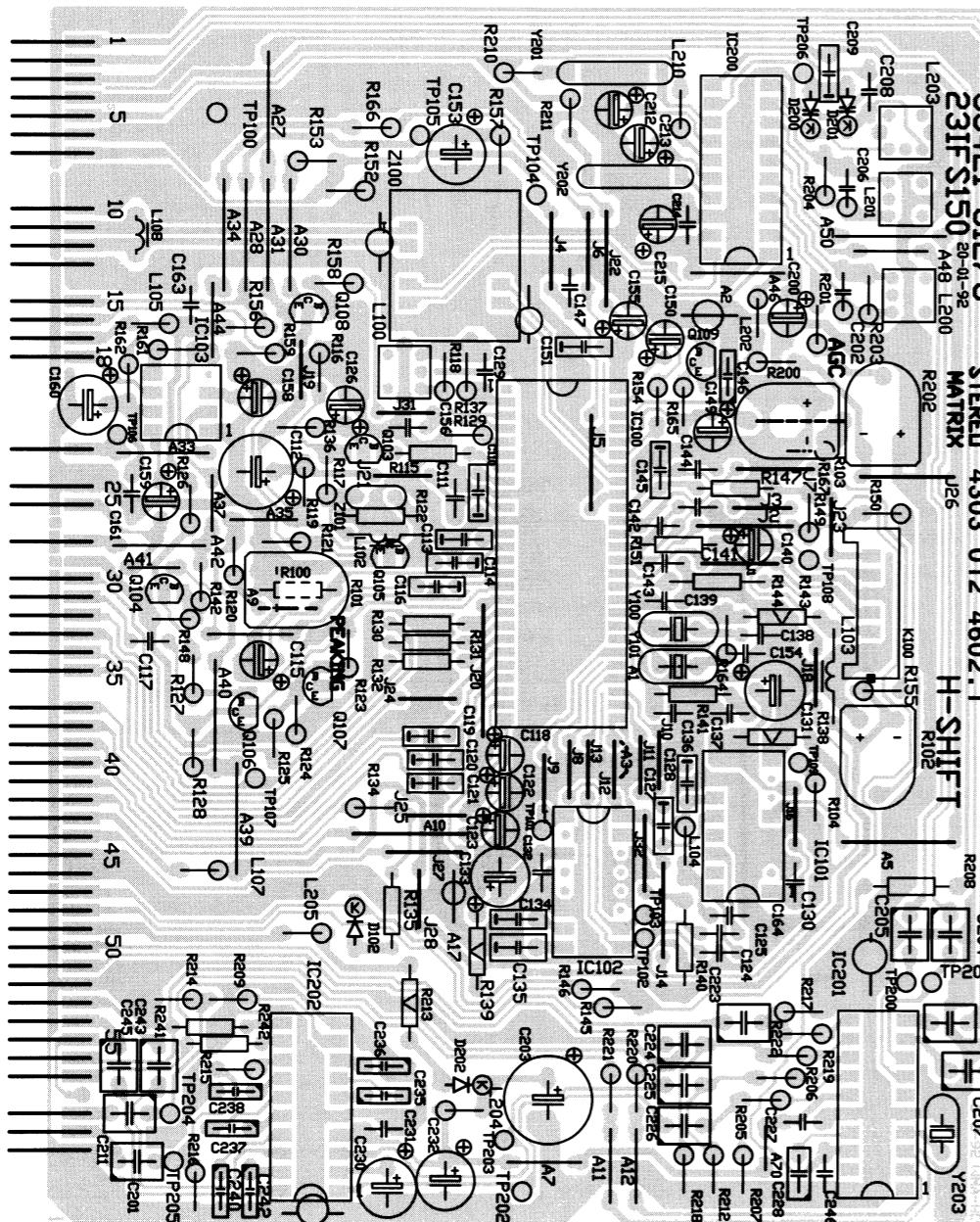


Pin	Volt								
1	-	5	-	9	-	13	4,4	17	2,7
2	5,6	6	3,8	10	7,6	14	2,7	18	2,2
3	5,6	7	3,2	11	-	15	3,4	19	2,2
4	5,7	8	1,7	12	3,0	16	-	20	2,2
29	3,9	33	4,7	37	0,4	41	2,5	45	3,8
30	1,5	34	2,5	38	0,5	42	2,5	46	3,8
31	1,5	35	2,0	39	3,0	43	3,5	47	5,2
32	1,7	36	7,6	40	3,8	44	4,0	48	3,8
52	6,6								

Pin	Volt								
29	3,9	33	4,7	37	0,4	41	2,5	45	3,8
30	1,5	34	2,5	38	0,5	42	2,5	46	3,8
31	1,5	35	2,0	39	3,0	43	3,5	47	5,2
32	1,7	36	7,6	40	3,8	44	4,0	48	3,8
52	6,6								

**ZF-Farbdekomponierer**  
IF-Colour decoder

**Bestückungsseite**  
Top view



**Steckerbelegung ZF-Farbdekomponierer**  
Pin allocation IF-Colour decoder

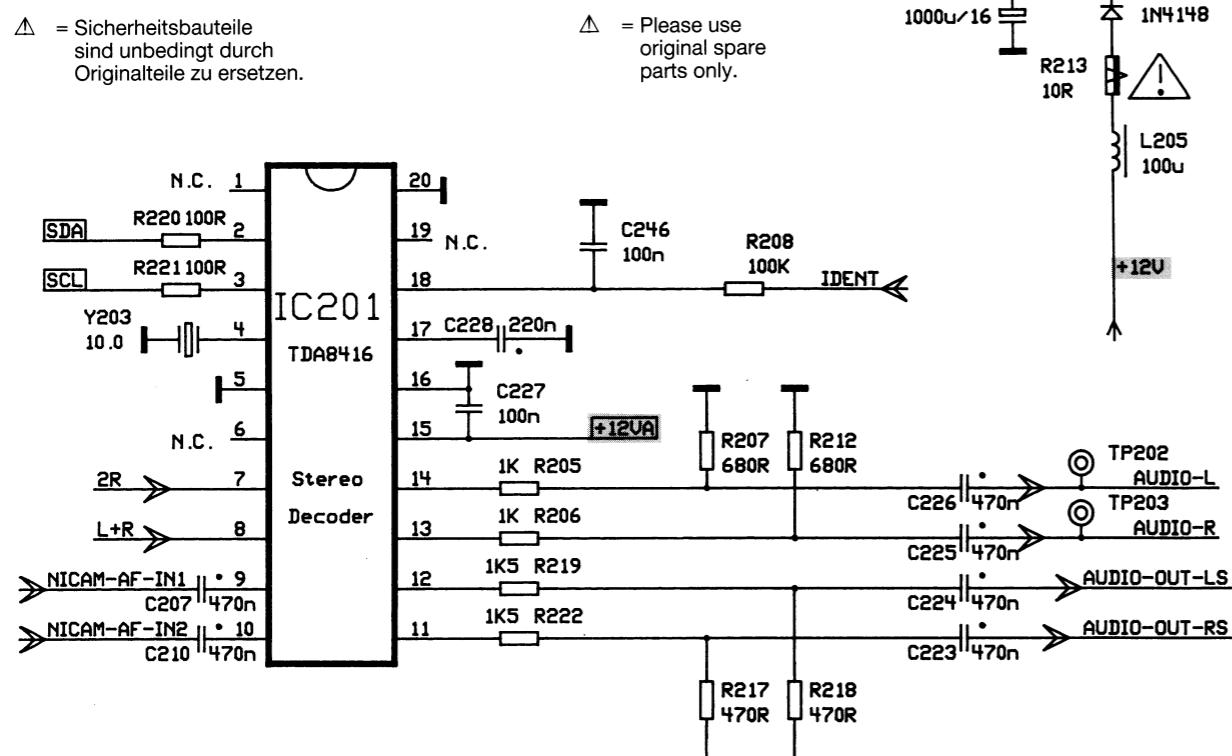
M01	NICAM-AF-IN2
M02	GND
M03	NICAM-AF-IN1
M04	+5U
M05	NICAM-IF
M06	GND
M07	AFC
M10	GND
M11	IF1
M12	IF2
M13	GND
M15	AGC
M16	IDENT
M17	+12U
M18	CUBS-TEXT
M23	CUBS-OUT
M25	GND
M26	CUBS-IN
M28	AU
M30	SUHS
M31	SUHS-C
M33	CRT-R
M34	CRT-G
M35	CRT-B
M36 = N.C.	
M37	EXT-BL
M38	EXT-R
M39	EXT-G
M40	EXT-B
M41	CON
M42	SAT
M43	+8U
M44	BRI
M45	GND
M46	GND
M47	BCL
M48	+33U
M49	+12U
M50	AUDIO-OUT-RS
M51	AUDIO-OUT-LS
M52	GND
M53	AUDIO-IN-LS
M54	AUDIO-IN-RS
M55	TINT
M56	SDA
M57	SCL
M59	AUDIO-OUT-R
M60	AUDIO-OUT-L
M61	GND

MC-Service

## Stereo-Dekoder

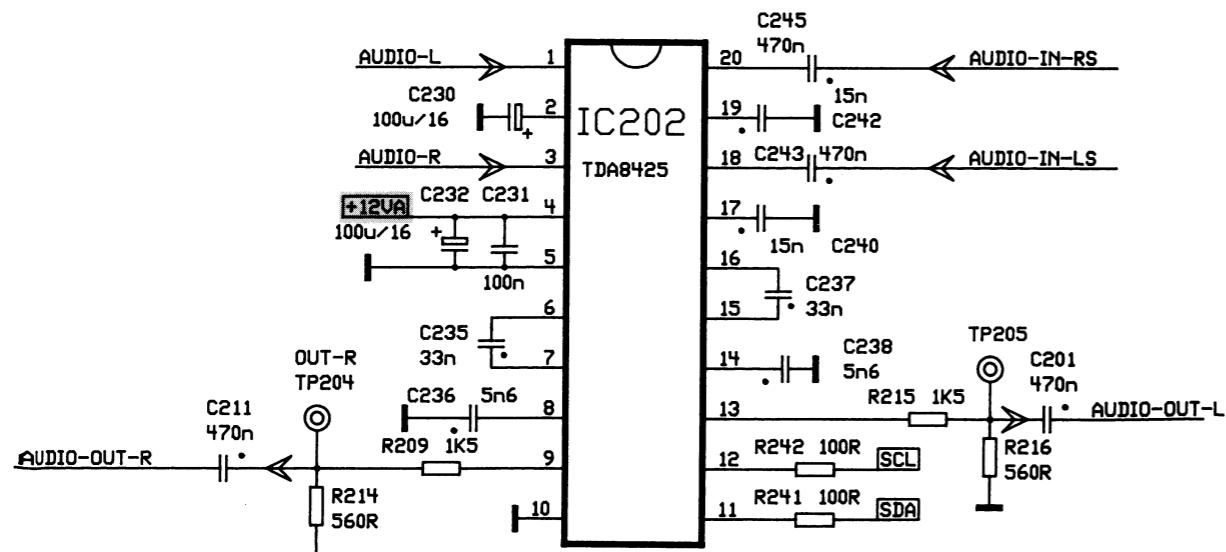
### Stereo decoder

$\Delta$  = Sicherheitsbauteile sind unbedingt durch Originalteile zu ersetzen.



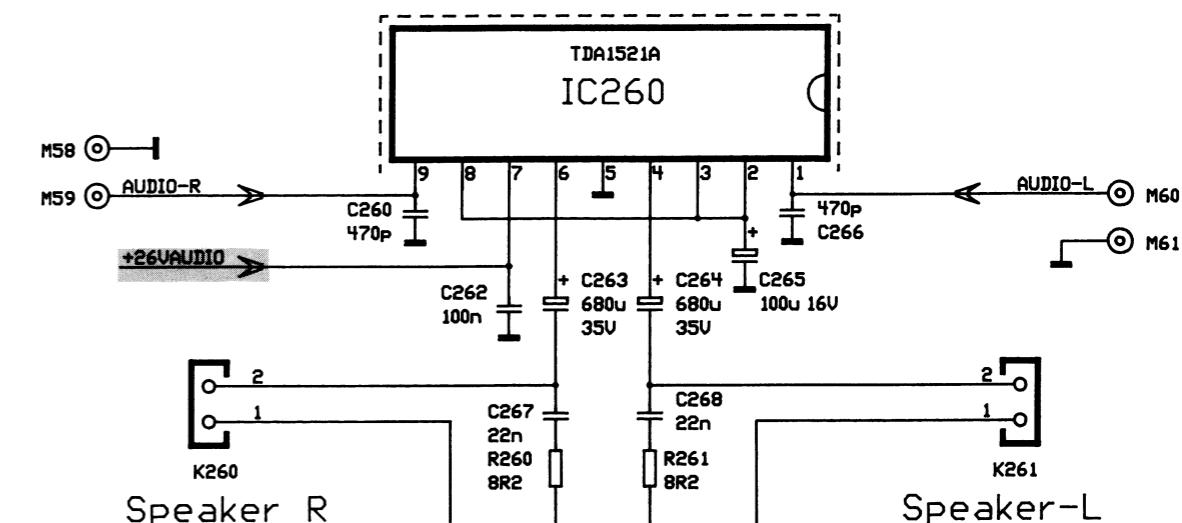
## NF-Schalt- und Regelstufe

### AF switch and regulation circuit



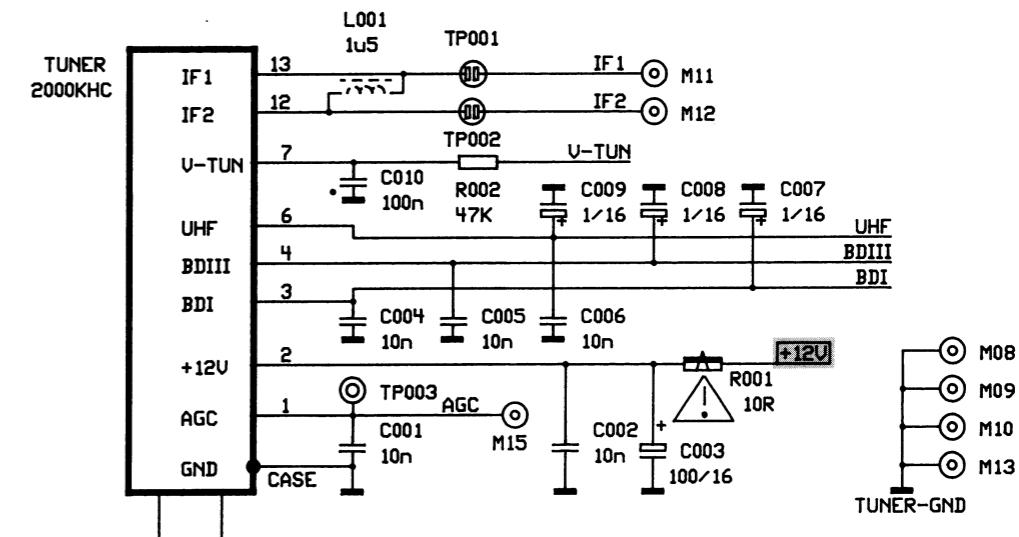
## NF-Endstufe

### AF amplifier



## Tuner

### Tuner

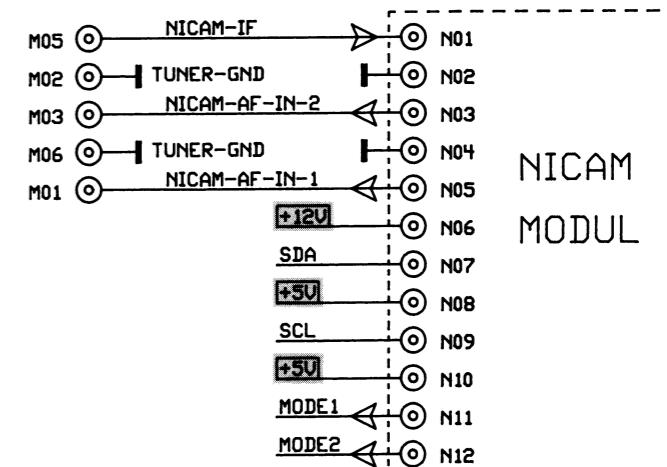


M08  
M09  
M10  
M13

## Nicam-Modul

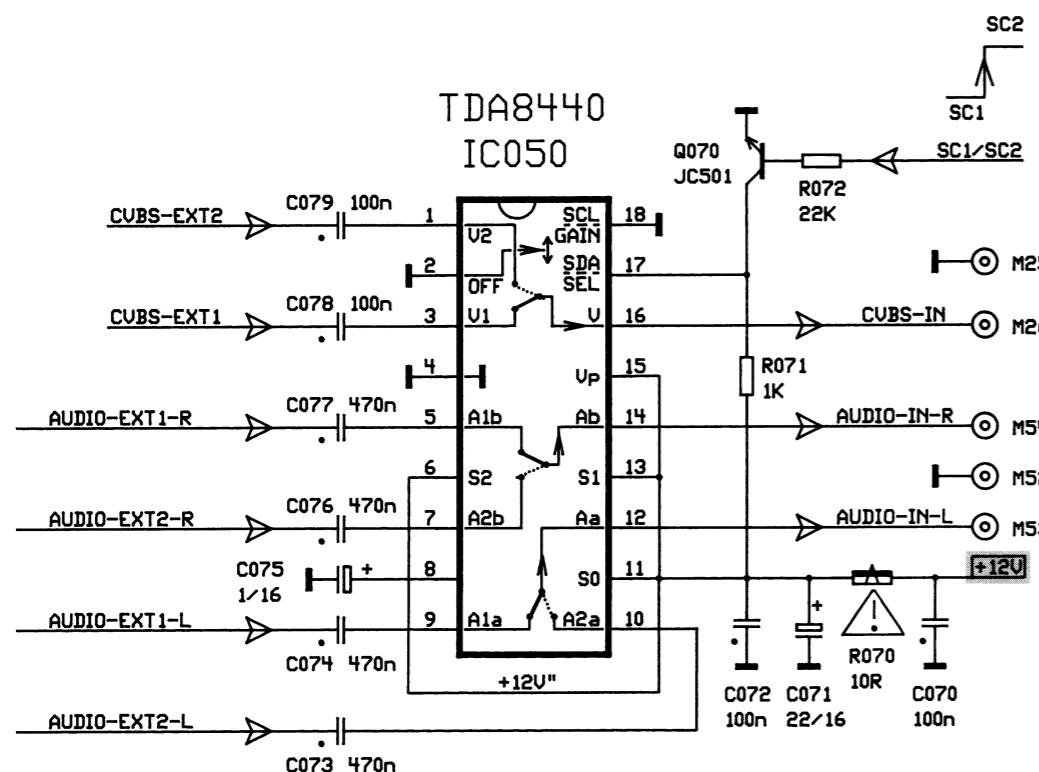
### Nicam module

### MC-Service



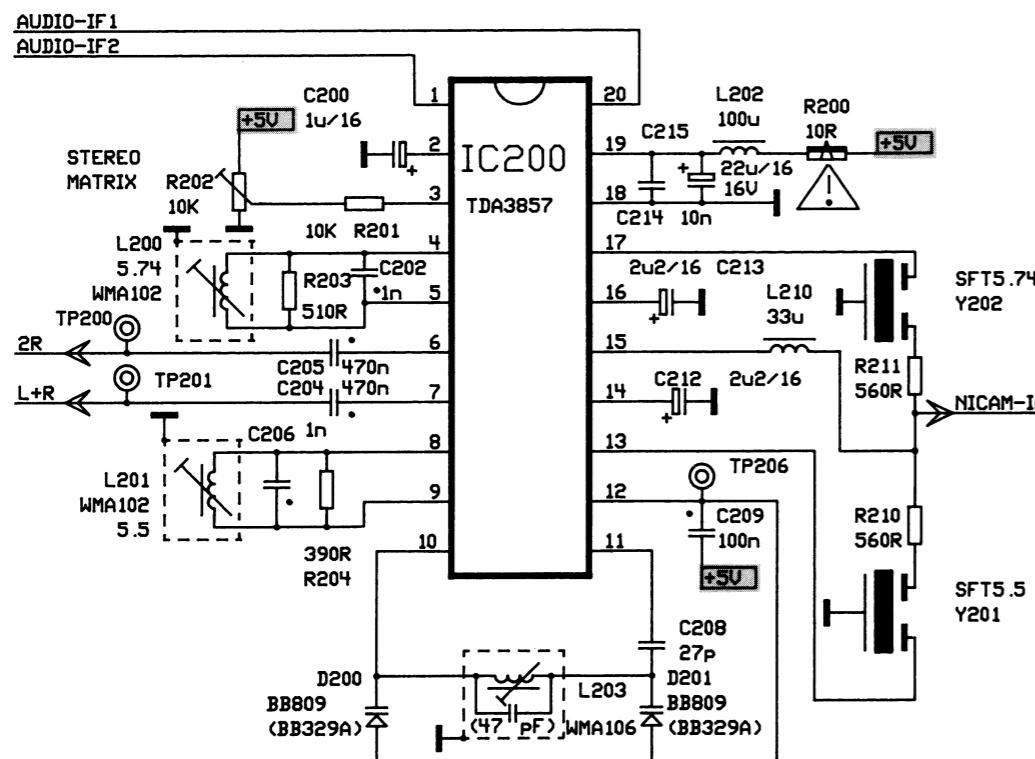
## Quellenumschaltung

Source select



## Quasi-Parallelsound-Demodulator

Quasi parallelsound demodulator



MC-Service

## Bestellhinweise

Hints for order

Bitte bei Ersatzteilbestellung die genaue Bezeichnung und **Ident-Nr. (siehe Typenschild)** des Gerätes sowie Bestell-Nummer und Positions-Nummer des Ersatzteils angeben.

For ordering of spare parts please state exact description and **ident no. of unit (see silver rating label on the backside of unit)** as well as part no. and position no. of required spare parts.

Bei Einsendung bitte folgendes beachten:

**Farbbildröhre** ist mit den Ablenkspulen eine Einheit.

Entmagnetisierungsspule mit Halter, Masseband und Anschlußleitungen für Ablenkspulen nicht einsenden!

Benutzen Sie:

Telefax: 08245/51326

oder

\* 317298 #

Bestell-Nr./ Part. No.	Bezeichnung	Description	Position	Preisgruppe/ Price-key
39 483 00	<b>Grundplatine STV 12 Pal/Secam</b>	<b>Main board STV 12 Pal/Secam</b>		H 7
61 360 00	Tuner 2000 KHC	Tuner 2000 KHC		E 1
61 242 00	Rahmen Grundplatine	Chassis bracket		B 9
61 092 00	Scartbuchse	Scart-connector		A 7
61 373 00	Hochspannungskabel	Cable high voltage		B 3
61 374 00	Fokuskabel	Cable focus		A 5
15 427 00	Montageclip	Clip	IC 400	A 1
31 331 00	Montageclip	Clip		A 0
31 672 00	Silikonfolie	Pad		A 2
31 673 00	Isolier-Pad	Pad	IC 400	A 2
61 380 00	IC TDA 8440	IC TDA 8440		B 6
61 244 00	IC TDA 5121 A	IC TDA 5121 A		B 9
61 445 00	IC PCA 84 C 841	IC PCA 84 C 841		C 9
61 233 00	IC PCF 8582 E	IC PCF 8582 E		IC 301
61 243 00	IC PC 74 HCT	IC PC 74 HCT		IC 302
61 246 00	IC TDA 3654	IC TDA 3654		B 4
61 056 00	IC TDA 4605-2	IC TDA 4605-2		IC 800
31 732 00	IC MC 78 S 05 2A	IC MC 78 S 05 2A		IC 801
61 383 00	IC L 7808 1A 8 V	IC L 7808 1A 8 V		IC 802
31 925 00	IC LM 317 T	IC LM 317 T		A 5
61 231 00	IC SAA 5246 P/E	IC SAA 5246 P/E		IC 803
61 232 00	IC FCB 61 C 65	IC FCB 61 C 65		IC 901
61 265 00	Transistor IC 501 P	Transistor IC 501		C 2
61 330 00	Transistor IA 101 P	Transistor IA 101 P		A 3
61 331 00	Transistor BF 819	Transistor BF 819		div.
61 332 00	Transistor BU 508 AF	Transistor BU 508 AF		A 8
61 333 00	Transistor BDT 61 BF	Transistor BDT 61 BF		Q 600
61 361 00	Transistor ON 4521 F	Transistor ON 4521 F		Q 601
61 334 00	Transistor BD 234	Transistor BD 234		B 4
15 430 00	Gleichrichter	Rectifier		Q 650
61 476 00	Diode 1 N 4007 50 A	Diode 1 N 4007 50 A		A 6
61 313 00	Diode BYE 33 G	Diode BYE 33 G		Q 800
38 541 00	Diode 1 N 4148	Diode 1 N 4148		B 4
61 314 00	Diode BAV 21	Diode BAV 21		D 603, 608
61 630 00	Diode BY 228	Diode BY 228		A 7
61 315 00	Diode BYW 96 D	Diode BYW 96 D		D 606
23 954 00	Z-Diode 3,6 V	Z-Diode 3,6 V		A 5
61 316 00	Diode BYD 33 J	Diode BYD 33 J		D 609
61 317 00	Diode BYW 95 B	Diode BYW 95 B		A 5
61 408 00	Diode ZTK 33 B	Diode ZTK 33 B		D 809
61 403 00	Diode BYD 33 M	Diode BYD 33 M		A 5
				D 811
				A 3

Bestell-Nr./ Part. No.	Bezeichnung	Description	Position	Preisgruppe/ Price-key
61 283 00	Elko 680 µF 35 V	Electrolytic capacitor 680 µF 35 V	C 263, 264	A 5
61 289 00	Elko 3300 µF 35 V	Electrolytic capacitor 3300 µF 35 V	C 407	B 4
38 713 00	Elko 1000 µF 35 V	Electrolytic capacitor 1000 µF 35 V	div.	A 8
61 293 00	Foko 0,1 µF 250 V	Capacitor 0,1 µF 250 V	C 608	A 3
61 299 00	Foko 0,027 µF 1 kV	Capacitor 0,027 µF 1 kV	div.	A 5
61 465 00	Foko 0,68 µF 100 V	Capacitor 0,68 µF 100 V	C 613	A 4
61 304 00	Kerko 1000 pF 1000 V	Ceramic capacitor 1000 pF 1000 V	div.	A 3
31 808 00	Elko 220 µF 385 V	Electrolytic capacitor 220 µF 385 V	C 804	C 0
61 308 00	Foko 0,68 µF 250 V AC	Capacitor 0,68 µF 250 V AC	C 805	B 0
61 309 00	Foko 0,15 µF 250 V AC	Capacitor 0,15 µF 220 V AC	C 806	A 5
61 310 00	Foko 0,1 µF 250 V AC	Capacitor 0,1 µF 250 V AC	C 807	A 5
11 006 00	Kondensator 4700 pF 63 V	Capacitor 4700 pF 63 V	C 810	A 2
31 809 00	Elko 1000 µF 25 V	Electrolytic capacitor 1000 µF 25 V	C 812	A 6
61 307 00	Kondensator 8200 pF 63 V	Capacitor 8200 pF 63 V	C 816	A 3
61 312 00	Kerko 3300 pF 4 kV	Ceramic capacitor 3300 pF 4 kV	C 822	A 5
38 156 00	Elko 1000 µF 16 V	Elektrolytic capacitor 1000 µF 16 V	C 836	A 4
61 271 00	Sicherungswiderstand 10 Ω	Fuse resistor 10 Ω	div.	A 3
61 337 00	Sicherungswiderstand 330 Ω	Fuse resistor 330 Ω	R 402	A 3
61 338 00	Sicherungswiderstand 2,2 Ω	Fuse resistor 2,2 Ω	R 405	A 3
61 339 00	Sicherungswiderstand 1,8 Ω	Fuse resistor 1,8 Ω	R 414, 415	A 3
61 449 00	Drahtwiderstand 1,5 kΩ 5 W	Wire resistor 1,5 kΩ 5 W	R 601	A 9
61 499 00	Metox 1 kΩ	Metox 1 kΩ	R 602	A 3
61 344 00	Drahtwiderstand 0,68 Ω 4 W	Wire resistor 0,68 Ω 4 W	R 604	A 9
61 351 00	Sicherungswiderstand 0,22 Ω	Fuse resistor 0,22 Ω	div.	A 3
61 345 00	Metox 33 Ω 2 W	Metox 33 Ω 2 W	R 644	A 2
61 341 00	Sicherungswiderstand 10 kΩ	Fuse resistor 10 kΩ	R 645	A 3
61 342 00	Sicherungswiderstand 220 Ω	Fuse resistor 220 Ω	R 650	A 3
61 365 00	Drahtwiderstand 2,7 Ω 4 W	Wire resistor 2,7 Ω 4 W	R 801	A 9
61 366 00	Metox 75 kΩ 1 W	Metox 75 kΩ 1 W	R 802	A 3
15 433 00	Widerstand PTC	Resistor PTC	R 804	A 8
61 448 00	Sicherungswiderstand 1 Ω	Fuse resistor 1 Ω	R 809	A 5
61 349 00	Metox 270 kΩ 0,6 W	Metox 270 kΩ 0,6 W	R 810	A 3
61 352 00	Metox 4,7 MΩ 0,5 W	Metox 4,7 MΩ 0,5 W	R 817	A 2
61 353 00	Metox 22 kΩ 2 W	Metox 22 kΩ 2 W	R 818	A 2
61 500 00	Drahtwiderstand 27 kΩ 6,5 W	Wire resistor 27 kΩ 6,5 W	R 820	A 9
61 355 00	Trafo Dioden Split	Fly-back transformer	TR 600	D 8
61 356 00	Treibertrafo	Transformer horizontal drive	TR 602	B 5
61 495 00	Trafo Schaltnetzteil	Switching transformer	TR 801	C 4
61 321 00	Spule 4 MHz	Coil 4 MHz	L 301	A 5
61 322 00	Spule Linearität	Coil linearity	L 601	B 4
61 498 00	Spule O/W	Coil E/W	L 602	B 4
61 325 00	Spule O/W	Coil E/W	L 604	B 3
61 326 00	Netz Drossel 2 x 47 mH	Line Filter 2 x 47 mH	L 800 A	B 6
61 328 00	Netzfilter 185 µH	Line Filter 185 µH	L 803	A 9
61 274 00	Quarz 10,0 MHz	Crystal 10.0 MHz	Y 300	A 9
61 281 00	Quarz 27,0 MHz	Crystal 27.0 MHz	Y 900	B 0
39 481 00	ZF Farbdecoder	IF Colour decoder		F 3
61 240 00	IC TDA 8362-N2	IC TDA 8632-N2	IC 100	D 5
61 239 00	IC TDA 4661	IC TDA 4661	IC 101	B 6
61 238 00	IC TDA 8395	IC TDA 8395	IC 102	C 2
61 369 00	IC TEA 2014	IC TEA 2014	IC 103	B 4
61 235 00	IC TDA 3857	IC TDA 3857	IC 200	C 1
61 236 00	IC TDA 8416	IC TDA 8416	IC 201	C 6
61 237 00	IC TDA 8425	IC TDA 8425	IC 202	C 3
61 265 00	Transistor IC 501 P	Transistor IC 501 P	div.	A 3
38 541 00	Diode 1 N 4148	Diode 1 N 4148	div.	A 0
61 396 00	Diode BB 809	Diode BB 809	D 200, 201	A 4
61 256 00	Kondensator 1000 pF 160 V	Capacitor 1000 pF 160 V	C 202	A 3

Bestell-Nr./ Part. No.	Bezeichnung	Description	Position	Preisgruppe/ Price-key
61 269 00	Sicherungswiderstand 4,7 Ω 1/3 W	Fuse resistor 4.7 Ω 1/3 W	R 138, 139	A 1
61 268 00	Sicherungswiderstand 1 Ω 1/3 W	Fuse resistor 1 Ω 1/3 W	R 143	A 2
61 271 00	Sicherungswiderstand 10 Ω	Fuse resistor 10 Ω	R 213	A 3
61 261 00	Spule ZF-Demodulator	Coil IF demodulator	L 100	A 5
61 262 00	Spule 5,5/5,74 MHz	Coil 5,5/5,74 MHz	L 200, 201	A 5
61 263 00	Spule 38,9 MHz	Coil 38,9 MHz	L 203	A 5
61 275 00	Filter OFW G 3203	Filter OFW G 3203	Z 100	C 0
61 406 00	Filter Keramik TPS 5,5 MHz	Filter ceramic TPS 5,5 MHz	Z 101	A 5
14 580 00	Filter Keramik 5,5 MHz	Filter ceramic 5.5 MHz	Y 201	B 0
14 630 00	Filter Keramik 5,74 MHz	Filter ceramic 5.75 MHz	Y 202	B 0
61 272 00	Quarz 4,43 MHz	Crystal 4.43 MHz	Y 100	B 0
61 274 00	Quarz 10,0 MHz	Crystal 10.0 MHz	Y 203	B 0
61 277 00	Abschirmblech	Screening plate	ZZ 2	B 4
66 451 00	<b>Bildröhrenplatine STV 12</b>	<b>Colour tube board STV 12</b>		<b>D 9</b>
61 230 00	IC TDA 6101 Q	IC TDA 6101 Q	IC 701, 702, 703	B 4
61 330 00	Transistor JA 101 P	Trans JA 101 P	Q 700	A 3
11 241 00	Diode 1 N 4148	Diode 1 N 4148	D 700	A 2
38 016 00	Foko 0,22 µF 250 V	Capacitor 0.22 µF 250 V	C 713	A 5
61 224 00	Kerko 0,01 µF 2,6 kV	Ceramic capacitor 0.01 µF 2.6 kV	C 740	A 5
61 269 00	Sicherungswiderstand 4,7 Ω	Fuse-resistor 4.7 Ω	R 700	A 1
61 379 00	Sicherungswiderstand 100 Ω	Fuse-resistor 100 Ω	R 704	A 1
31 966 00	Metox 2,7 Ω	Resistor 2,7 Ω	R 741	A 1
38 000 00	Röhrensockel 8pol.	Socket picture tube 8-pin	K 702	B 2
39 488 00	<b>Bedienteilplatine</b>	<b>Control panel</b>		<b>D 6</b>
61 152 00	Infrarot-Empfänger HC 377	Infrared- receiver HC 377		B 2
38 603 00	LED rot	LED red		A 2
61 029 00	Netzschalter	Power switch		B 4
61 183 00	Tastschalter	Tact switch		A 5
61 068 00	Netzkabel	Line cable		B 4
15 917 00	Schaltherz	Door locker		B 1
18 531 00	Bedienteilblende	Bracket operating panel		A 9
38 107 00	Klappe Bedienteil	Front control panel door		B 5

### Notizen:

### Notes:

MC-Service

## Operation of your colour television

### General

With the system developed for this set, all functions are normally controlled with the infrared remote control unit.

If this unit is temporarily unavailable, for example because the batteries have discharged, the most important functions can also be controlled directly at the set (local control panel).

### Local control

Press the cover on the front panel inwards. This opens the cover, and the controls behind it will be accessible.

The "brightness", "contrast", "colour saturation", "chromaticity" and "volume" can be set with the local control panel as follows:

Press the "SELECT" button 6 repeatedly until the appropriate symbol appears in the information line (see "On-screen display"). Then alter the selected function with the "LINEAR +/-" buttons 4.

### On-screen display

Control of the most important functions is simplified by the coloured information line (= on-screen display) which appears on the left-hand side of the screen.

This indicates either the current status or the desired function change in graphic form.

The meanings of the various symbols are as follows:

	= Volume
	= Brightness
	= Contrast
	= Colour saturation
	= Chromaticity
	= Mute
	= Personal preference (ideal setting)
	= "Off" time, not programmed
	= "Off" time, programmed (in this case 15 minutes)

The on-screen display disappears again automatically approximately 4 seconds after the last input.

### Setting TV stations

There are two ways of setting TV stations:

- Automatic station search
- Manual tuning.

### Automatic station search

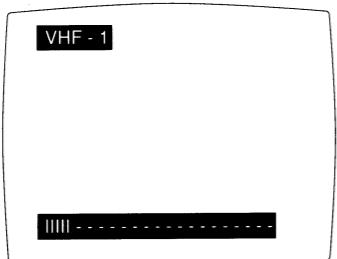
Press the "SEARCH" button 5 on the local control panel to start the automatic station search function.

The search covers all TV bands:

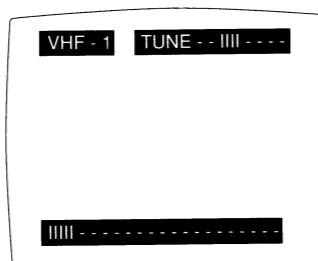
VHF-1 : Channels 2-4, S1-S6  
VHF-3 : Channels 5-12, S7-S20

UHF : Channels 21-69

These are located consecutively in the specified sequence, and are scanned in the same sequence by the automatic station search function. The current information is displayed on the screen during the automatic station search, e.g.:



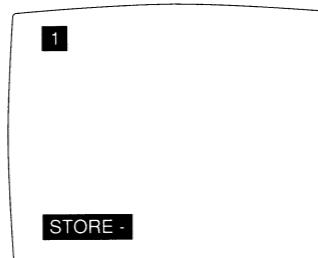
If one of these buttons is pressed, the following information is displayed on the screen (example):



Keep the button pressed down until the station is received clearly. The on-screen display disappears again approximately 4 seconds after the button is released, and the station can if necessary be set once more exactly with the automatic fine tuning function. Punch one of these buttons repeatedly to fine-tune the station.

### Programming stations

Set the desired station as described above in "Setting TV stations". The following information is displayed on the screen if the "STORE" memory button 8 is pressed (example):



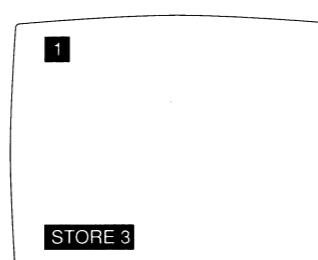
As soon as a station with a reasonable reception is reached, the search stops automatically and the station is set to the optimum frequency. The on-screen display disappears again.

The search can be restarted by punching the "SEARCH" button 5 again. The set is muted for the duration of the search.

**Note:**  
If you press the "SEARCH" button 5 and hold it down, the set will be switched over to the next TV band after approximately 4 seconds, e.g. from VHF-1 to VHF-3 and then to UHF.

### Manual tuning

The "FINE TUNING +/-" buttons 2 on the local control panel can be used for manual tuning.



If you press the "STORE" memory button 8 again, the colour of the word "STORE" will change from red to green, and the station will be stored under the desired program number. When the word "STORE" disappears, the program number which has just been set is displayed briefly in the top left-hand corner of the screen.

Program all other desired stations under the different program numbers by repeating the steps described above:

- set the station,
- press the "STORE" memory button 8
- select the desired program number
- press the memory button again.

The stations need only be programmed the first time the set is used, or if the aerial system or reception conditions are changed.

You can obtain the channels of your television stations from the local press, from the Post Office or from your specialist dealer. 90 program numbers are provided for storing stations. You can store any station under any program number. We recommend programming station 1 as 1, station 2 as 2, station 3 as 3, etc.

### Selecting program numbers

There are two ways of selecting a desired program number:

1. By selecting the program numbers one at a time with the "PROGRAM +/-" buttons 3 on the local control panel or the "P-/+/" buttons 26 on the remote control unit.

**Note:**  
The program numbers will not be called up one after the other (counting either forwards or backwards) unless a station has actually been stored under them.

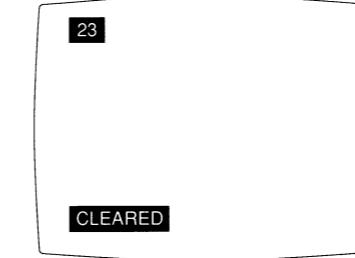
2. By selecting the program number directly by means of the digit buttons 16 on the remote control unit.

The on-screen display then provides the following information (example):



The "—>>" button 17 must be pressed in order to change from a program number between 0 and 9 (1-digit program number) to a program number between 10 and 89 (2-digit program number). Two horizontal lines "—" then appear in the on-screen display in the top left-hand corner. The desired program number must then be entered with the digit buttons. The procedure for changing from a 2-digit program number to a 1-digit program number is the same.

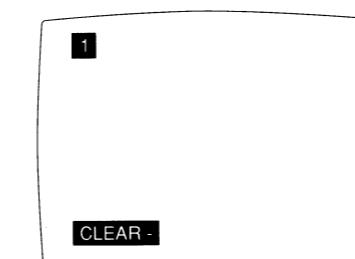
If you use the digit buttons to select a program number for which no station has been stored or for which the station has been cleared (see "Clearing program numbers"), the contents of the on-screen display will be as follows (example):



### Clearing program numbers

If you wish to clear a program number (e.g. because a station which has already been stored under another number is programmed there), proceed as follows:

1. Press the "CLEAR" button 7; the on-screen display then contains the following information (example):



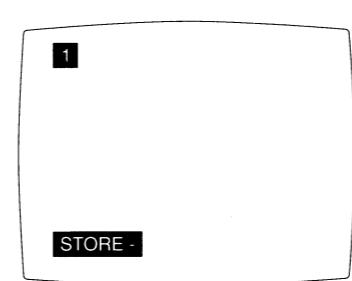
2. Enter the program number you wish to clear with the "PROGRAM +/-" buttons 3 or the "P-/+/" buttons 26 or the digit buttons 16.
3. Press the "CLEAR" button 7 again. The colour of the word "CLEAR" changes from red to green, and the program number which has been entered is cleared.



### Ideal setting = personal preference (PP)

The picture and sound are set to normal values in the factory. You can however set and store the contrast, brightness, colour saturation, chromaticity and volume to suit your personal tastes. The ideal setting then appears automatically when you switch on the set by pressing the power button 10 and the "►◀" (PP) button 27.

To store the ideal picture, set the desired values with the 19, 20, 29 and 30 buttons on the remote control unit or with the "SELECT" button 6 and the "LINEAR +/-" buttons 4 on the local control panel. Then press the "STORE" memory button 8. The on-screen display then contains the following information (example):



It is also possible to clear a stored personal preference setting again. To do so, first press the "CLEAR" button 7 on the local control panel. The word "CLEAR" then appears in the on-screen display. Then press the "►◀" button 27 on the remote control unit. The on-screen display then contains the message "CLEAR PP". If you press the "CLEAR" button again, the colour of the word "CLEAR" changes from red to green and the various values are set as follows:

Volume	20 %
Brightness	65 %
Colour saturation	65 %
Contrast	50 %
Chromaticity	50 %

### Slumber switch

If broadcasting on a channel has ceased, e.g. after the broadcasting station has closed down, the set is switched automatically to Stand-by after approximately 5 minutes.

**Note:**  
The slumber circuit is not active in AV mode.

### Connection of external auxiliary equipment

### Video recorder and video disc player

Video recorders and video disc players have an RF modulator, which converts the recorded signals into aerial signals. If you connect your video recorder to the aerial socket of your television set, you must set the station channel (Ch. 30-37) of the video recorder to program number 0 and store it in order to play back. To do so, you should proceed as described in "Setting TV stations" and "Programming stations". The video recorder must be set either to playback mode or to the test station. Please consult the operating instructions of your video equipment for the various connection options. The quality will be improved if you connect and operate the equipment via the "Scart" socket 13. Please consult your specialist dealer for the necessary connecting cables.

### Technical data

- Voltage synthesizer tuning
- 90 program numbers
- Cable reception
- CCIR-PAL B/G colour television standard, SECAM East, NTSC 4.43
- Automatic program search
- On-screen display (OSD)
- = coloured text information line
- Infrared remote control unit
- Programmable "off" time function
- "Slumber" switch for switching off automatically after closedown
- Euro-Scart socket
- Videotex
- Mains voltage 220 V/50 Hz

Adequate screening is provided for the X-radiation generated in your set.  
Max. acceleration voltage 27.5 kV.

If the set is opened by unauthorized persons, in particular if the high voltage is adjusted or the cathode ray tube replaced, the amount of X-radiation may be increased substantially. The approval for a set altered in this manner is then no longer valid, and the set must no longer be operated.

More instructions in the user manual.

